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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,040	03/26/2004	Donald A. Ice	15436.446.1	8454

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EXAMINER

BEVERIDGE, RACHEL E

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 04/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/810,040

Applicant(s)

ICE, DONALD A.

Examiner

Rachel E. Beveridge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/03/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings were received on February 9, 2006. These drawings are acceptable.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 9 and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant claims "rigidly attaching" the optical assembly to a printed circuit board (claim 1-line 8, claim 9-line 16, claim 10- lines 1-2). The specification does not contain support for the broadly stated "rigidly attaching" process. More specifically the specification discloses the invention does not require epoxy reinforcement and avoids alignment handling issues ([0012], lines 2-3 and [0033], lines 2-3). Although applicant has made the argument that the support for "rigidly attaching" is disclosed within the specification, the disclosure as stated above does not anticipate the broad claim of "rigidly attaching." Furthermore, the specification does not provide any exact disclosure of "rigidly attaching." The examiner suggests amending

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the claim to more accurately encompass the disclosure without incorporating broad limitations that cannot be supported due to the specificity of the disclosure.

Claims 1,9, and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant claims "rigidly attaching" the optical assembly to a printed circuit board (claim 1-line 8, claim 9-line 16, claim 10- lines 1-2). The specification does not contain support for the broadly stated "rigidly attaching" process. More specifically the specification discloses the invention does not require epoxy reinforcement and avoids alignment handling issues ([0012], lines 2-3 and [0033], lines 2-3). Although applicant has made the argument that the support for "rigidly attaching" is disclosed within the specification, the disclosure as stated above does not anticipate the broad claim of "rigidly attaching." Furthermore, the specification does not provide any exact disclosure of "rigidly attaching." The examiner suggests amending the claim to more accurately encompass the disclosure without incorporating broad limitations that cannot be supported due to the specificity of the disclosure.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 6-10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Card et al. (U.S. 5,295,214).

With respect to claim 1, Card discloses a "process for manufacturing the improved soldered joint between an optical sub-assembly and a flexible ribbon cable; and more generally between the leads of a component and an electrical interconnect structure," (Column 3, lines 54-58) as seen in figure 1(100). Card also discloses there is a connection between the exposed terminals of the conductors on the optical sub-assembly and the electrical circuit (Column 4, lines 64-68). Furthermore, Card discloses mass soldering of any flexible or rigid circuit board (abstract) and states, "the soldering bridge is made an integral part of the land so that the soldering bridge contributes to the strength of the connection between the land and the solder joint" (column 6, lines 31-34).

With respect to claim 2, Card discloses that the leads in figure 1(104) are soldered within the holes in figure 1(106) (Column 4, lines 55-57 and column 9, lines 63-69).

Regarding claim 3, Card's disclosure of figure 1 and the positioning of "an electrical interconnection member within said housing and adjacent said first and second optical sub-assembly on the side of the sub-assemblies from which the leads extend, for electrical interconnection between elements of said optical module" (Column 10, lines 31-36).

With respect to claim 4, Card discloses the method in which the optical sub-assembly and the ribbon cable are positioned, and lists reflow soldering as a process to attain this configuration (Column 8, lines 14-21).

Regarding claims 6 and 7, Card also disclosed "typically, one optical sub-assembly is a light transmitter for converting an electrical signal into an optical signal and the other is a light receiver for converting the optical signal into an electrical signal" (Column 1, lines 48-53). Column 5, lines 24-29 refers to a transmitter optical sub-assembly and column 4, lines 51-57 refer to a receiver optical sub-assembly.

With respect to claim 8, Card's discloses leads that are "integrally connected" to conductors that extend into a dielectric layer of the flexible cables (Column 4, lines 57-60). Card teaches a dielectric layer with which the leads are connected to and conductors extend from (Column 4, lines 57-60), as seen in figure 1. The general definition of a dielectric material is one that is non-conducting and is therefore considered insulating.

With respect to claims 9-10, Card discloses a "process for manufacturing the improved soldered joint between an optical sub-assembly and a flexible ribbon cable; and more generally between the leads of a component and an electrical interconnect structure," (Column 3, lines 54-58) as seen in figure 1(100). Card also discloses electrical contacts corresponding to the leads of the optical sub-assembly and conductors connected to a circuit (Column 3, lines 54-58 and Column 4, lines 64-68). Furthermore, Card discloses mass soldering of any flexible or rigid circuit board (abstract) and states, "the soldering bridge is made an integral part of the land so that

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the soldering bridge contributes to the strength of the connection between the land and the solder joint" (column 6, lines 31-34).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Card et al. as applied to claim 1 above, and further in view of Liu et al. (U.S. 2003/0026,081).

Card does not disclose the hot bar process as the method for connecting the leads of the conductive structure to the printed circuit board. Liu teaches that the "protruding contact leads are suitable for hot bar reflow, which is where a heated bar is used to melt the contact leads such that they bond with an external surface" (Page 3, column 2, paragraph [0028], lines 10-13), as seen in figure 1 of Liu's application. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Card to utilize a hot bar process in order to provide an efficient method for connecting the leads of the conductive structure to a printed circuit board (see Liu, page 3, paragraph [0028], lines 10-13).

Response to Arguments

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Applicant's arguments filed February 9, 2006 have been fully considered but they are not persuasive.

Applicant argues that the rejection of claims 1-4, and 6-9 should be withdrawn because Card continuously discloses bonding a flexible ribbon cable but does not rigidly attach the optical assembly to a printed circuit board (page 9). The examiner disagrees and notes that Card discloses mass soldering of any flexible or rigid circuit board (abstract) and states, "the soldering bridge is made an integral part of the land so that the soldering bridge contributes to the strength of the connection between the land and the solder joint" (column 6, lines 31-34).

Applicant argues that claim 5 is allowable because independent claim 1 and newly presented claim 10 are allowable and therefore the disclosure of Card does not sufficiently apply to the claims (page 10). The examiner disagrees for reasons previously stated.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rachel E. Beveridge whose telephone number is 571-272-5169. The examiner can normally be reached on Monday through Friday, 9 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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JONATHAN JOHNSON
PRIMARY EXAMINER